



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/521,490      | 01/18/2005  | Yutaka Saitou        | 37395               | 6965             |

116 7590 07/03/2006

PEARNE & GORDON LLP  
1801 EAST 9TH STREET  
SUITE 1200  
CLEVELAND, OH 44114-3108

EXAMINER

YOUNG, JANELLE N

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2618

DATE MAILED: 07/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/521,490 | <b>Applicant(s)</b><br>SAITOU ET AL. |  |
|                              | <b>Examiner</b><br>Janelle N. Young  | <b>Art Unit</b><br>2618              |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                   |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                              | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Objections*

1. Claim 4 is objected to because of the following informalities: the word “**th**” (Page 7, line 2) is misspelled the word should read “**the**”. Appropriate correction is required.

Claim 5 is objected to because of the following informalities: the word “**helf**” (Page 7, line 5) is misspelled the word should read “**half**”. Appropriate correction is required.

Claim 18 is objected to because of the following informalities: the word “**teh**” (Page 7, line 2) is misspelled the word should read “**the**”. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Sawamura et al. (US Patent 2003/0148784).

As for claim 1, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device (Abstract; Page 3, Para 0032-

0033; Page 4, Para 0068; Page 5, Para 72; Page 6, Para 0097; Page 7, Para 0099, & 0107-0109; Page 8, Para 0113, 0115-0116, & 0122-0123; and Page 9, Para 0127), comprising:

a first upper casing (Fig. 15:2; Fig. 24-28:36; and Fig. 30-31:36); which reads on claimed first casing; and a second lower casing (Fig. 15:3; Fig. 24-28:37; and Fig. 30-31:37); which reads on claimed second casing (Abstract; Page 3, Para 0032-0033; Page 4, Para 0068; Page 5, Para 72; Page 6, Para 0097; Page 7, Para 0098-0101, 0103-0104, 0108- 0109 & 0111; Page 8, Para 0113, 0115-0117, & 0120-0123; and Page 9, Para 0124-0126 & 0130);

a hinge section (Fig. 24-28:38 and Fig. 30-31:38); which reads on claimed connection portion, connecting the first casing to the second casing are rotatably connected; which reads on claimed freely rotate (Page 6, Para 0097; Page 7, Para 0100, 0107, & 0109 0111; and Page 8, Para 0115);

a first antenna element (Fig. 1:65; Fig. 15B:13; and Fig. 27:47), provided in the first casing (Abstract; Page 1, Para 0001; Page 3, Para 0032-0033; Page 5, Para 0071; Page 8, Para 0117; and Page 9, Para 0128);

a conductor element (Fig. 1:66 and Fig. 17:22a & b), provided in the second casing to form a dipole antenna (Fig. 6: 80 & 82) together with the first antenna element (Abstract; Page 1, Para 0001, 0003-0007, & 0009; Page 2, Para 0013 & 0016; Page 3, Para 0032-0033 & 0024-0026; Page 5, Para 0071 & 0079; Page 8, Para 0117; and Page 9, Para 0128);

a feeding pin/section (Fig. 1:69; Fig 9A & B99; Fig. 10b:104; Fig. 15B:18 & 19; Fig. 16-17:18 & 19; Fig. 18B:18 & 19; Fig. 23B:50 & 51; 29:50 & 51); which reads on claimed feeding portion, having one end electrically connected to the first antenna element and the other end electrically connected to the conductor element (Page 1, Para 0003 & 0007; Page 2, Para 0014, 0019 & 0024-0026; Page 5, Para 0071, 0075-0076, 0078, & 0083; Page 7, Para 0099; and Page 8, Para 0113, 0117-0118 & 0120-0121).

As for claims 2 & 3, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, wherein a plurality of first antenna elements are provided in the first casing; and the portable radio device further comprising an antenna-switching detection means (Fig. 27-28:57 & 58 and Fig. 30:61); which reads on claimed switching portion which switches the plurality of first antenna elements so as to connect and/or to electrically connect to the feeding portion (Page 8, Para 0113-0121 and Page 9, Para 0124-0129) and/or the plurality of the first antenna elements are electrically connected to the conductor element, respectively portion (Page 2, Para 0014 and Page 9, Para 0124-0129).

As for claims 4 & 5, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, further comprising a half-wavelength element (Fig. 6:80 & 82) being electrically connected between at least one

of the plurality of the first antenna elements and the switching portion (Page 2, Para 0016)

wherein the switching portion selectively switches the plurality of the first antenna elements and the plurality of the half-wavelength elements so as to connect to the feeding portion (Page 2, Para 0016 with respect to Page 2, Para 0021; Page 5, Para 0075, 0078, & 0083; and Page 8, Para 0113 & 0117-0118).

As for claim 6, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, further comprising a plurality of impedance matching portions (Fig. 8A:89) respectively corresponding to the plurality of the first antenna elements (Page 1, Para 0007; Page 2, Para 0019-0020 & 0022; Page 5, Para 0079; and Page 6, Para 0085).

As for claim 7, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, further comprising:

the antenna-switching detection means (Fig 23 A&B and Fig. 28-29:57 & 58) detects an antenna-switching request signal corresponding to opening or closing condition of the first upper and second lower casings; and the contact points (Fig. 28-29:57a & b and Fig. 28-29:58a & b); which reads on claimed control portion, controlling the switching portion in accordance with the detected

result of the casing opening and closing state detecting portion (Page 9, Para 0128-0130 in respect to Page 7-8, Para 0115-0126).

As for claim 8, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, further comprising a control portion, determining a receiving level of a transmission/reception circuit(RF circuit) (Fig. 16:20 and Fig. 28-29:59); which reads on claimed radio circuit portion, to control the switching portion so as to raise the receiving level (Page 5, Para 0075-0076 and Para 8, Para 0118-0121).

As for claim 9, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, wherein the antenna element and the conductor element (Fig. 1-2:66 and Fig. 16:28) are respectively formed in planar; which reads on claimed plate shapes, along the surface of the first casing and the second casing (Page 1, Para 0003-0007, 0009, & 0013; and Page 8, Para 0113).

As for claim 10, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, further comprising: eccentric

a circuit board (Fig. 15:10; Fig. 12:113; and Fig 23B: 43 & 45), provided in the second casing and having a transmission/reception circuit (RF circuit) (Fig. 16:20 and Fig. 28-29:59); which reads on claimed radio circuit, (Abstract; Page 1,

Para 0011 in respect to Page 2, Para 0015; Page 3, Para 0027-0028, 0032  
Page 7, Para 0099; and Page 8, Para 0113);

wherein the conductor element is formed in a ground pattern (Fig. 17:67)  
which is formed on the circuit board provided in the second casing (Page 1-2,  
Para 0012 and Page 5, Para 0078)

wherein a ground of the radio circuit portion is electrically connected to the  
ground pattern (Page 1, Para 0012-0014; Page 5, Para 0079; and Page 6, Para  
0086-0088, & 0092); and

wherein the feeding portion is provided in the radio circuit portion (Page 5,  
Para 0075-0076; Page 8, Para 0118 & 0120-0121).

As for claim 11, Sawamura et al. teaches a portable wireless communication  
terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and  
Fig. 31:62) which reads on claimed portable radio device, further comprising:

a second antenna element, provided in the second casing near the  
connection portion (Abstract; Page 1, Para 0001; Page 3, Para 0032-0034;  
Page 5, Para 0070-0081; Page 6, Para 0088-0096; Page 7, Para 0099-0111;  
Page 8, Para 0114-0123; and Page 9, Para 0126 & 0128);

the antenna-switching detection means (Fig 23 A&B and Fig. 28-29:57 &  
58) detects an antenna-switching request signal corresponding to opening or  
closing condition of the first upper and second lower casings; and the contact



points (Fig. 28-29:57a & b and Fig. 28-29:58a & b); which reads on claimed control portion, controlling the switching portion in accordance with the detected result of the casing opening and closing state detecting portion; and a switching portion, selecting and switching any one of the first antenna element and the second antenna element to a connection to a signal processing portion for performing a signal process in accordance with the detected result of the casing opening and closing state detecting portion (Page 9, Para 0128-0130 in respect to Page 7-8, Para 0115-0126),

wherein when the first casing and the second casing are opened, the first antenna element and the conductor element form the dipole antenna; and wherein when the first casing and the second casing are closed, the second antenna element and the conductor element form a mono-pole antenna (Abstract; Page 1, Para 0001, 0003-0007, & 0009; Page 2, Para 0015 & 0018; Page 3, Para 0024-0026; and Page 5, Para 0082-0084).

As for claim 12, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, wherein when the first casing and the second casing are opened, the switching portion selects the first antenna element; and wherein when the first casing and the second casing are closed, the switching portion selects the second antenna element (Page 9, Para 0128-0130 in respect to Page 7-8, Para 0115-0126).

As for claim 13, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, further comprising:

a second antenna element provided in the second casing near the connection portion (Abstract; Page 1, Para 0001; Page 3, Para 0032-0034; Page 5, Para 0070-0081; Page 6, Para 0088-0096; Page 7, Para 0099-0111; Page 8, Para 0114-0123; and Page 9, Para 0126 & 0128);

a receiving field intensity measuring portion, measuring the receiving field intensity of a signal received by the first antenna element or the second antenna element; and a switching portion, selecting and switching the antenna element having a higher receiving field intensity to a connection to a signal processing portion for performing a signal process in accordance with the measured result of the receiving field intensity measuring portion (Page 5, Para 0075-0076; Page 8, Para 0114-0120; and Page 9, Para 0128-0130),

wherein the first antenna element has a first feeding point for electrically connecting to the conductor element; wherein the second antenna element has second feeding point for electrically connecting to the conductor element; and wherein the first feeding point and the second feeding point are provided at the diagonal positions of opposed sides when the first casing and the second casing are opened (Page 1, Para 0003 & 0007; Page 2, Para 0014, 0019 & 0024-0026;

Page 5, Para 0071, 0075-0076, 0078, & 0083; Page 7, Para 0099; and Page 8, Para 0113, 0117-0118 & 0120-0121).

As for claim 14, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, further comprising:

a first matching portion, matching the impedance of the first antenna element to a prescribed value; and a second matching portion, matching the impedance of the second antenna element to a prescribed value (Page 1, Para 0007; Page 2, Para 0019-0020 & 0022; Page 5, Para 0079; and Page 6, Para 0085).

As for claim 15, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, further comprising:

a circuit board, provided in the second casing (Abstract; Page 1, Para 0011 in respect to Page 2, Para 0015; and Page 3, Para 0027-0028, 0032 Page 7, Para 0099 and Page 8, Para 0113);

a plurality of feeding portions, feeding electric current to the antenna element and being separated to each other (Page 1, Para 0003 & 0007; Page 2, Para 0014, 0019 & 0024-0026; Page 5, Para 0071, 0075-0076, 0078, & 0083; Page 7, Para 0099; and Page 8, Para 0113, 0117-0118 & 0120-0121);

a radio circuit, disposed in the circuit board (Abstract; Page 1, Para 0011-0014 in respect to Page 2, Para 0015; Page 3, Para 0027-0028, 0032; Page 7, Para 0099; and Page 8, Para 0113 in correspondence to Page 1, Para 0012-0014; Page 5, Para 0079; and Page 6, Para 0086-0088, & 0092); and

a switching portion, provided between the plurality of feeding portions and the radio circuit and selecting any one of the plurality of the feeding portions to connect the radio circuit (Page 9, Para 0128-0130 in respect to Page 7-8, Para 0115-0126).

As for claim 16, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, further comprising:

a circuit board, provided in the second casing (Abstract; Page 1, Para 0011 in respect to Page 2, Para 0015; and Page 3, Para 0027-0028, 0032 Page 7, Para 0099 and Page 8, Para 0113);

a radio circuit, disposed in the circuit board and electrically connected to the feeding portion (Abstract; Page 1, Para 0011-0014 in respect to Page 2, Para 0015; Page 3, Para 0027-0028, 0032; Page 7, Para 0099; and Page 8, Para 0113 in correspondence to Page 1, Para 0012-0014; Page 5, Para 0079; and Page 6, Para 0086-0088, & 0092);

a ground portion, spaced from the feeding portion and connecting the antenna element to the circuit board (Page 1, Para 0012-0014; Page 5, Para 0079; and Page 6, Para 0086-0088, & 0092); and

a switching portion, switching whether the ground portion is connected to the circuit board or the ground portion and the circuit board are opened (Page 9, Para 0128-0130 in respect to Page 7-8, Para 0115-0126).

As for claim 17, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, wherein a plurality of ground portions are provided; and

wherein the ground portions are disposed so as to be spaced apart in the end part of the antenna element connected to the second casing (Page 1, Para 0003-0006 & 0012; Page 2, Para 0013 & 0020; and Page 6, Para 0092).

As for claim 18, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, wherein the switching portion switches the ground portions respectively (Page 9, Para 0128-0130 in respect to Page 7-8, Para 0115-0126).

As for claims 19-20, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, the connection portion has

an electric conductivity; and wherein the ground portion and/or the feeding portion is electrically connected to the antenna element through the connection portion (Page 2, Para 0014; Page 3, Para 0034; Page 5, Para 0080; and Page 6, Para 0086-0092).

As for claim 21, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, further comprising: a control circuit, controlling the switching portion in accordance with the level of a receiving signal received by the radio circuit (Page 9, Para 0128-0130 in respect to Page 7-8, Para 0115-0126 in correspondence with Page 5, Para 0075-0076; Page 8, Para 0114-0120; and Page 9, Para 0128-0130).

As for claim 22, Sawamura et al. teaches a portable wireless communication terminal device (Fig. 15:1; Fig. 24-24:35; Fig. 25-26:53; Fig. 27-28:56; Fig. 30:60; and Fig. 31:62) which reads on claimed portable radio device, wherein the first antenna element is an electric conductive frame forming a part of the first casing (Page 2, Para 0014; Page 3, Para 0034; Page 5, Para 0080; and Page 6, Para 0086-0092).


### ***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle N. Young whose telephone number is (571) 272-2836. The examiner can normally be reached on Monday through Friday: 8:30 am through 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JNY  
June 22, 2006

  
**NAY MAUNG**  
**SUPERVISORY PATENT EXAMINER**